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TO: Minerals File

FROM: Holland Shepherd, Reclamation Specialist HWS

RE: Site Visit to Goldstrike Mine, Tenneco Minerals, M/053/005, Washington County, Utah

I visited the Goldstrike mine site on the morning of May 23, 1990. I met on the site with a Mr. Jim Smith of Tenneco Minerals. Mr. Smith is the superintendent of the mine. This particular site visit was scheduled to evaluate a problem that has developed in constructing the operator's West Hamberg Peak Pit access road. As a result of road construction to that pit, the operator has cast a large amount of material over a side of the mountain that has not yet been permitted. This side cast material is at the angle of repose, is fairly rocky or course in nature and hence presents a fair problem to revegetation. The operator requested Division assistance in developing ideas regarding the reclamation of this yet unpermitted area.

Mr. Smith explained to me that the operator intends to dump topsoil over the side of the embankment in an attempt to cover the courser rocky material. The area in question covers about 7 acres, from the top to bottom it is about 500 feet in length, and about 600 feet in width. I explained to Mr. Smith that to only dump topsoil material over the side, in an attempt to cover the course material, would probably not work and that the operator would have to use something more to stabilize the topsoil so that seeding would be effective. Some ideas for doing this would include excelsior netting, jute netting, or some other type of netting to stabilize the topsoil while the plants are taking root. Mr. Smith explained that within 5 to 6 weeks, the operation will loose access to that particular site so topsoil had to be hauled up within the next couple of weeks. I explained to Mr. Smith that the best thing to do would be to contact a contractor to install the netting and do the seeding. I also told him that I would furnish him with a list of contractors; they could then go ahead and contact these people on their own.

A problem arises from a seeding at this time of year at this particular site, because of the droughty nature of environmental conditions, especially within the next few months. Because of the time constraints dealing with the access of this particular site, the operator will probably not be able to do it again other than the end of June, which is a bad time to reclaim. Because of this, a seed mixture of plant species that may not germinate until the following year would be appropriate for this site. Conditions are especially bad this year because the area is extremely dry and is still right in the middle of a drought condition that has been ongoing for the last two years. I would recommend a mixture for this site that would involve annual grass species that would come up fairly rapidly for short term stabilization purposes, with the addition of perennial grass seeds, forbs and shrubs for long term stability of this site. The best time for planting in this area, of course, would be the end of October or beginning of November after the very hot, dry season has passed. The operator will have to find a contractor to do this work and will have to formally amend this portion of the plan. I wouldn't think that a change in the bond would be necessary for this amendment.

As part of my inspection, I also looked at the area where the operation had experienced two cyanide solution leaks over the last couple of months. The area in question is associated with the crusher site at the base of one of the operator's heap leaching heaps. Apparently, none of the solution ran off of the disturbed area and into any of the undisturbed drainages associated with the site. The soil material that soaked up the cyanide solution was scooped up and placed back on the heap leach itself after the leak was repaired. Apparently, the operator cleaned up these leaks fairly rapidly according to the correspondence that we have in the file. I would say that very little environmental damage could have occurred from either one of these leaks because the amount of solution was not great and the leaks were cleaned up so rapidly. Also, it is my contention that the cyanide that was lost, would be attenuated very rapidly by environmental conditions, thus would not cause a problem for any length of time to surface or ground waters in the areas. The operator is in the process of constructing a berm and a ditch that will resolve any future leak problems in this area. The newly constructed area will channel escaping solution, that might occur, back into the solution ditches so that solution will not be able to get off the heap leach site again.

I also took a look at the new wildlife ditch covers that the operator has installed over the solution ditches at the mine site. The covers consist of ADS corrugated 24 inch plastic piping cut in half and anchored by sand bags over the top of the solution ditches. Mr. Smith indicated to me that to his knowledge no deer had ever tried to drink out of the solution ditches because they don't like the feeling of the plastic liner under foot, it scares them away. He did say, however, that ring-tailed cats, birds, and other

small critters can, and have accessed the solution ponds. The only other animal problem with these ditches was the unfortunate incident of two hunting dogs that got a little thirsty and thought that the water in the solution ditches was good to drink. This happened about a year ago.

Another area of interest to me during this inspection, was the topsoil stockpiles. According to Mr. Smith, since the topsoil stockpiles are still in a dynamic state, none of them have been stabilized with vegetation at this point in time. A couple of the topsoil stockpiles are located on steep slopes above or in small drainages; it would probably be a good idea to construct silt fences around the base of these topsoil stockpiles to avoid any loss of material, especially because they are not yet vegetated. I also told Mr. Smith that I would recommend a seed mixture to him that could be applied to these areas that would provide quick stabilization of topsoil material.

jb
cc: Ken Kluksdahl, Tenneco Minerals
Wayne Hedberg
Tony Gallegos
WMN/6-8